



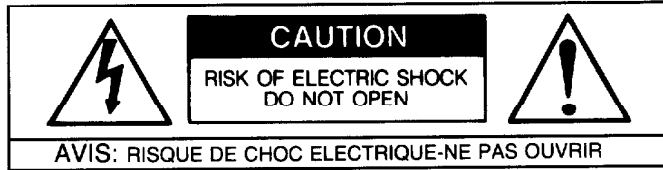
GFA-5802

**High Current MOSFET
Power Amplifier**

OWNER'S MANUAL

THE FOLLOWING PRECAUTIONS AND SAFETY INSTRUCTIONS ARE REQUIREMENTS OF UL AND CSA SAFETY REGULATIONS

Warning: To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.



The graphic symbol of a lightning flash with an arrow point within a triangle signifies that there is dangerous voltage within the unit and it poses a hazard to anyone removing the cover to gain access to the interior of the unit **Only qualified service personnel should make any such attempt.**



The graphic symbol of an exclamation point within an equilateral triangle warns a user of the device that it is necessary to refer to the instruction manual and its warnings for proper operation of the unit



Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the unit. Any mounting of the device should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Read all the safety and operating instructions before connecting or using this unit.

Retain this notice and the owner's manual for future reference.

All warnings on the unit and in its operating instructions should be adhered to.

All operating and use instructions should be followed.

Do not use this unit near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

The unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built-in installation, such as bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.

The unit should be connected to a power-supply outlet only of the voltage and frequency marked on its rear panel.

The power-supply cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles, or where the cord exits from the unit.

Clean unit only as recommended in its instruction manual.

The power-supply cord of the unit should be unplugged from the wall outlet when it is to be unused for a long period of time.

Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through any openings.

This unit should be serviced by qualified service personnel when:

- A. The power cord or the plug has been damaged, or
- B. Objects have fallen, or liquid has been spilled, into the unit; or
- C. The unit has been exposed to rain, or liquids of any kind, or
- D. The unit does not appear to operate normally, or exhibits a marked change in performance; or
- E. The device has been dropped, or the enclosure damaged.

**DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

ATTENTION

POUR PREVENIR LES CHOCs ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

CAUTION

POWER LINES

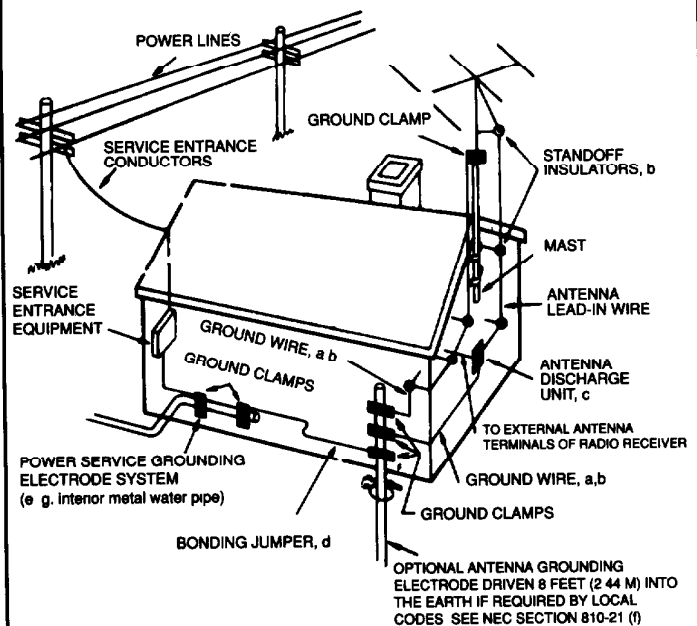
Any outdoor antenna must be located away from all power lines.

OUTDOOR ANTENNA GROUNDING

If an outside antenna is connected to your tuner or tuner-preamplifier, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

- a. Use No.10 AWG (5.3 mm²) copper, No.8 AWG (8.4 mm²) aluminum, No.17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
- b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4-6 feet (1.22-1.83 m) apart.
- c. Mount antenna discharge unit as close as possible to where lead-in enters house.
- d. Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - RADIO AND TELEVISION EQUIPMENT



NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the National Electrical Code that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

INTRODUCTION

Congratulations on your decision to purchase the GFA-5802 Stereo Power Amplifier. You have made a wise choice that will reward you with exceptionally accurate and musical sound reproduction for years to come. To realize the full potential of your new amplifier, please read these operating and installation instructions thoroughly before attempting to connect it.

FEATURES

- Precision matched MOSFETs used throughout the signal path.
- Over 100,000 μF of power supply filter capacitance with low ESR for greater reserve capacity.
- Reduced number of gain stages improves signal reproduction accuracy.
- Custom toroidal power transformer with dual secondaries provides greater peak current capability.
- Separate front-end power supply complete with separate transformers.
- Dual High quality, gold plated binding posts.
- Independent thermal protection and distortion LED's for each channel.
- Gold plated RCA jacks.
- Large external heatsinks for greater cooling capability of output devices.
- Heavy gauge, anodized aluminum front panel
- Powder coated, baked chassis and top cover for greater durability.
- Cooling vents on top cover for greater efficiency and cooler operation while driving low impedance loads

IMPORTANT NOTICE: ADCOM PROTECTION PLAN (USA ONLY)

ADCOM offers the enclosed valuable Limited Warranty. Please read the details on the Warranty Card carefully to understand the extent of the protection offered by the Warranty, its reasonable limitations, and what you should do in order to obtain its benefits. Be sure to verify that the serial number printed on the rear panel matches the serial number on the outer carton. If any number is altered or missing, you should notify us immediately in order to ensure that you have received a genuine ADCOM product which has not been opened, mishandled, or tampered with in any way.

UNPACKING

Before your new GFA-5802 left our factory, it was carefully inspected for physical imperfections and tested for all electrical parameters as a routine part of ADCOM's systematic quality control. This, along with full operational and mechanical testing, should ensure a product flawless in both appearance and performance. After you have unpacked the GFA-5802, inspect it for physical damage. Save the shipping carton and all packing material as they are intended to reduce the possibility of transportation damage, should the amplifier ever need to be shipped again. In the unlikely event damage has occurred, notify your dealer immediately and request the name of the carrier so a written claim to cover shipping damages can be initiated. **THE RIGHT TO A CLAIM AGAINST A PUBLIC CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY IN WRITING AND IF THE SHIPPING CARTON AND PACKING MATERIALS ARE NOT AVAILABLE FOR INSPECTION BY THE CARRIER. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM HAS BEEN SETTLED.**

PLACEMENT AND CARE OF THE GFA-5802

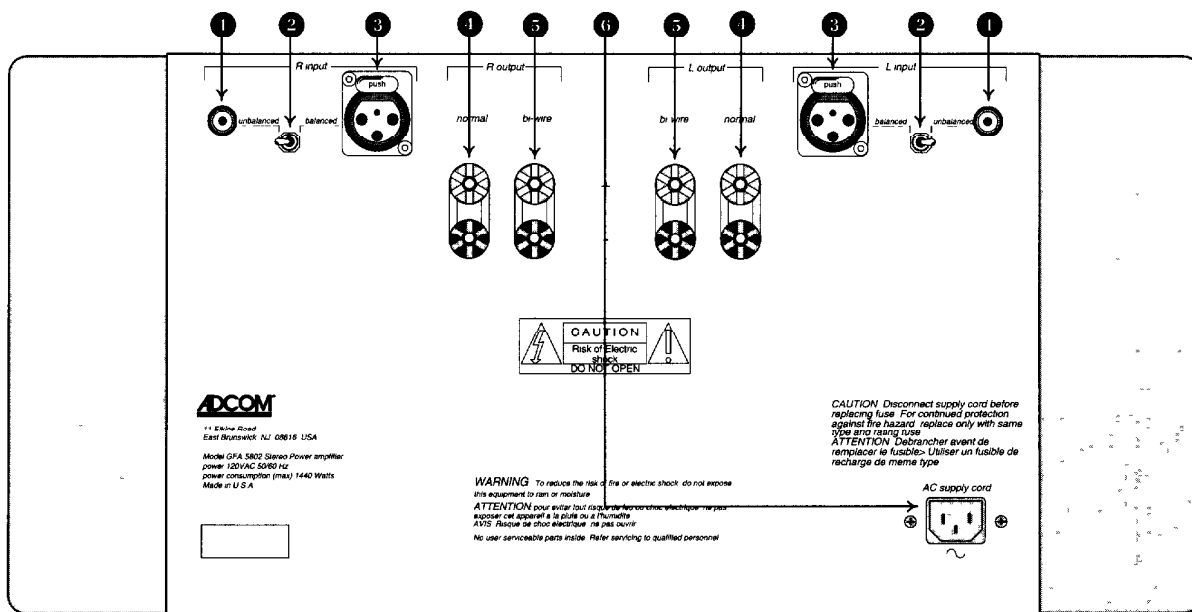
During normal home operation the heatsinks of the GFA-5802 will become very warm. However, there are instances during high-level playback into low impedances when the heatsinks will become much warmer than usual. To ensure the amplifier's long-term, trouble-free operation, it is necessary to provide adequate ventilation for the heatsinks. Therefore, the GFA-5802 should be kept away from external sources of heat such as radiators and hot-air ducts. The GFA-5802 should never be placed with other heat-producing components in a cabinet or enclosure lacking free air flow.

If you require that the GFA-5802 be mounted in an enclosed cabinet, it is recommended that the rear panel of the cabinet be provided with ventilation openings at the top and bottom to allow air to circulate freely in the cabinet. The top and bottom panel of the amplifier's chassis have been provided with vents to allow the necessary cooling of the internal components. It is important that these vents are not obstructed in any way.

We recommend that you do not stack other components on top of the GFA-5802. This is particularly important if your system includes low-impedance loudspeakers which are difficult to drive, or if you will consistently demand high volume levels from the amplifier and speaker system. Not only will heat generated by the amplifier affect the performance of equipment stacked on top of the GFA-5802, but the free flow of air through the ventilating slots in the amplifier may be partially obstructed.

If you observe these recommendations, the GFA-5802 will perform reliably in any reasonable environment. You should also pay attention to such normal considerations as protection from excessive dust and moisture. Occasional vacuuming of accumulated dust on the chassis, heatsinks, panels and around the ventilating slots should be all that is required.

The optimal performance of your new GFA-5802 will ultimately depend on the care with which you make the connections between the amplifier, preamplifier and the loudspeakers. All input and output signal connections should be made only with high quality, low-loss, low capacitance cables following the recommendations in the following relevant sections.



GFA-5802 Back Panel

WARNING

Whenever connections to or from the GFA-5802 are being made, be certain that the AC on/off switch of the amplifier is in the off position, the AC cord of the amplifier is disconnected from the AC wall outlet and that all associated components are turned off.

RIGHT/LEFT UNBALANCED (RCA) INPUTS ①

The audio inputs to the GFA-5802 are through two high quality, gold plated RCA jacks to minimize high frequency line losses, noise, etc. This input type is more common than the balanced XLR input (②) and is designed to work with an unbalanced preamplifier. They will accept standard RCA type plugs, one for each channel, LEFT and RIGHT. The RIGHT input is generally represented by the color red, while LEFT is usually represented by either white or black.

To preserve the correct stereophonic effects, please be certain to connect the left output of the preamplifier or tuner-preamplifier to the RCA jack on the GFA-5802 labeled LEFT INPUT and the right output of the source component to the RIGHT INPUT jack.

To ensure that the performance designed into the GFA-5802 is realized, you should use the highest quality cables feasible. Whatever cable you finally select, it should have low capacitance. Generally speaking, a cable with a capacitance of less than 100 pF will work best.

BALANCED/UNBALANCED SWITCHES ②

These switches should "point" towards the input that you are using. If the unbalanced RCA inputs are being used, then the switches should be in the *unbalanced* position. If you are using the balanced XLR inputs, then the switches should be in the *balanced* position. It is *not* suggested to connect both the balanced input to a balanced source *and* the unbalanced input to an unbalanced source at the same time.

RIGHT/LEFT BALANCED (XLR) INPUTS ②

When you are using a preamp that has balanced outputs (via XLR jacks), it may be directly connected to the GFA-5802 using "balanced XLR" cables. Pushing the release tab on the top of the input will release the XLR

NORMAL SPEAKER OUTPUTS ①

The GFA-5802 is "polarity correct" and does not invert phase. That is, any positive going signal at its input will appear as a positive going signal at its output.

The GFA-5802's connection to the loudspeakers are made through two high quality, five-way, gold plated binding posts located on the rear panel. These terminals will accommodate either bare wire, tinned wire, terminal pins, spade lugs or banana plugs, either single or dual. These output terminals are color coded RED and BLACK to indicate polarity. To ensure correct stereo phasing, you must connect the RED output terminal (labeled "+") to the loudspeaker input terminal color coded RED (or labeled POSITIVE, "+", POS, 8 OHMS or 4 OHMS). The BLACK binding post terminal on the amplifier (labeled "-")

should be connected to the loudspeaker input terminal color coded BLACK (or labeled NEGATIVE, "-", NEG, C, COMMON, G, or GROUND).

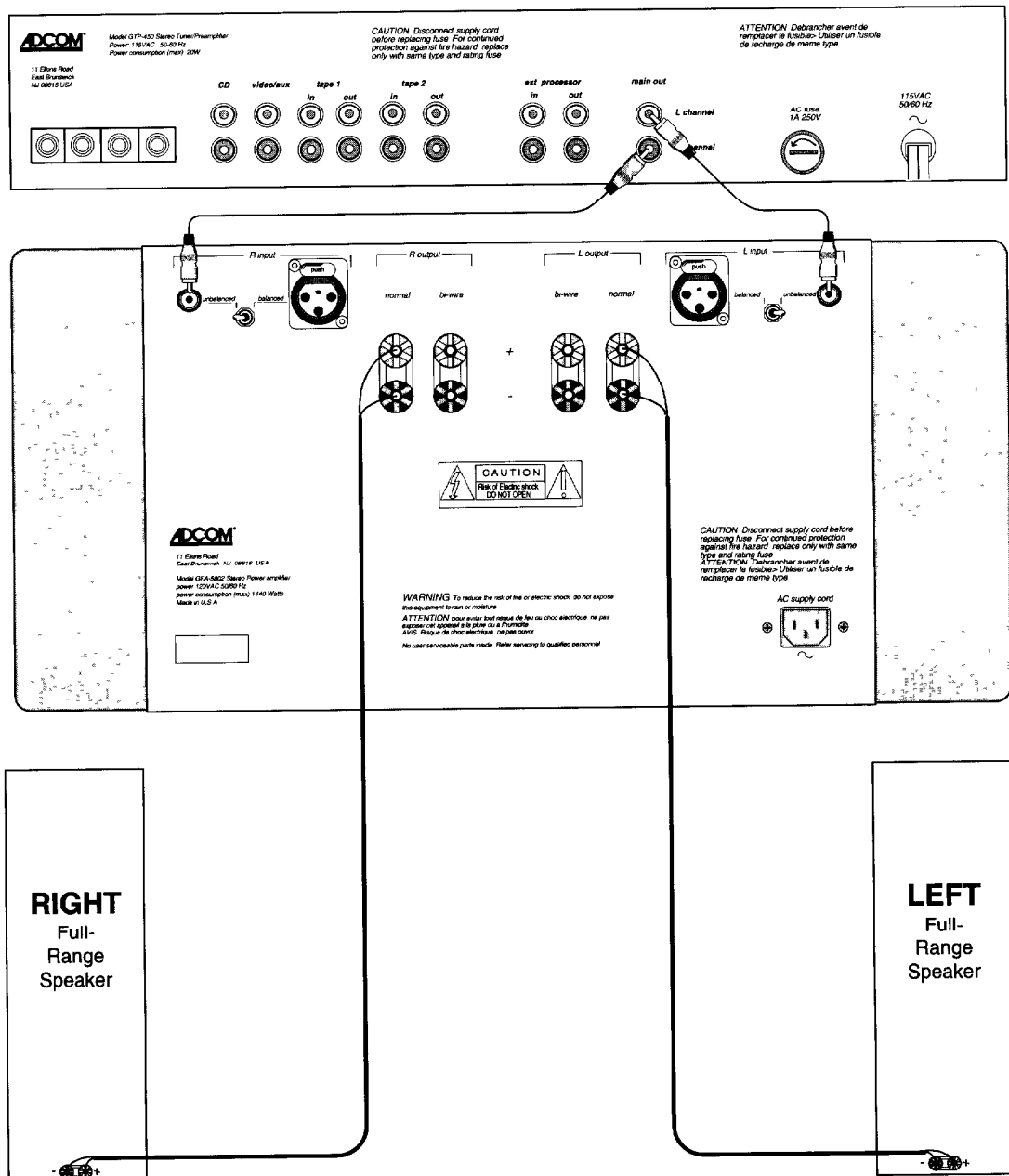
The RIGHT OUTPUT should be connected to the right channel loudspeaker, as you face the pair of loudspeakers, and the LEFT OUTPUT to the left channel loudspeaker.

Generally speaking, when making connections to the loudspeakers from the amplifier it is very important to use the correct type and size of wire in order to avoid unnecessary loss of amplifier power in the cable, reduction of amplifier damping factor and other undesirable conditions. It is suggested that with the GFA-5802 you should use at least 14AWG wire and preferably 12AWG. Contact your local Adcom dealer for an appropriate selection of high end cables.

Virtually any stereo pair of loudspeakers can be connected to, and driven by the GFA-5802. The amplifier can drive low impedances at more than adequate power levels with no difficulty. It should be noted here that many loudspeaker systems which are nominally rated at 4 ohms drop in impedance, in some parts of their frequency range, sometimes to below 2 ohms. You should not experience difficulties even with these very low impedance loads unless you demand excessively high volume levels from the system.

The following diagrams show basic system wiring for two speaker options.

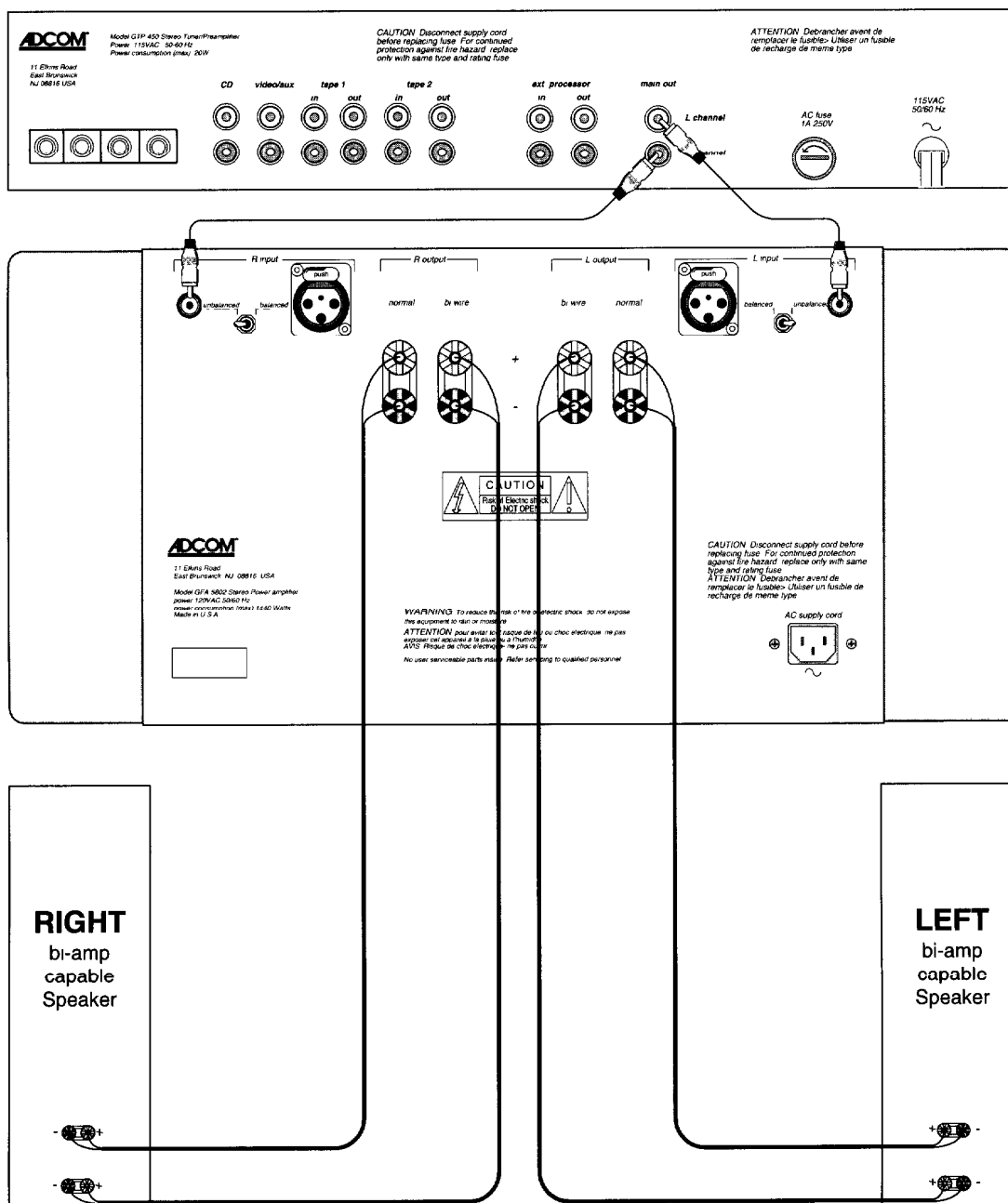
BASIC UNBALANCED WIRING DIAGRAM



BI-WIRE SPEAKER OUTPUTS ❶

The GFA-5802 incorporates an additional set of output terminals to facilitate bi-wired speaker systems. In a bi-wired system, there are two sets of speaker-wires that connect to each speaker (one for the low frequencies and one for the high frequencies). To be able to bi-wire your speakers, the speakers need to be bi-wirable (having two sets of input terminals, usually with a metal jumper installed between each pair). The following diagram conveys a basic bi-wired system.

BASIC BI-WIRED DIAGRAM



AC LINE SOCKET ❷

The GFA-5802's detachable power cord is supplied with a "grounded" AC plug. Make certain that the power cable is securely plugged into the AC Line Socket on the GFA-5802.

FRONT PANEL FEATURES

POWER LED

This LED will glow whenever the AC ON/OFF switch is turned on and the GFA-5802 is energized. The POWER LED indicates that there is AC voltage being fed to the amplifier, but it does not signify that all the amplifier's circuits are in operation. If, for example, the THERMAL PROTECTION LED glows, the amplifier will not produce sound even though the POWER LED may still glow. Additionally, the internal power transformer is provided with a thermostat which will interrupt power to the transformer if its temperature exceeds 125°C. This high temperature will seldom, if ever, be encountered unless the amplifier is subjected to abnormal conditions, such as operation into loads of less than 2 ohms at very high listening levels for long periods of time, etc. Once the temperature within the transformer decreases to a normal level, the thermostat will reset itself automatically and normal operation will resume.

INSTANTANEOUS DISTORTION ALERT LED's

The INSTANTANEOUS DISTORTION ALERT circuit is a unique ADCOM distortion detection system which reads all forms of non-linear distortion such as THD, IM, slew-induced, "clipping", etc. The INSTANTANEOUS DISTORTION ALERT LED's will light when distortion reaches 1% regardless of impedance, voltage/current phase angle or the reactance of the loudspeakers which the amplifier is driving. Sometimes, when the amplifier is in use, the LED's may occasionally flicker during high volume listening, particularly if you are driving low impedances. This flickering is no cause for concern. The LED's are simply warning you that the amplifier has reached its maximum power output into the particular loudspeakers you are using. If, however, the INSTANTANEOUS DISTORTION ALERT LED's glow brightly or are illuminated most of the time during playback, you are overdriving the amplifier and should turn down your volume control to reduce the listening level, otherwise it may cause the THERMAL PROTECTION to be activated or, in extreme cases, damage your loudspeakers.

THERMAL PROTECTION LED's

The GFA-5802 is provided with a thermal protection circuit which will shut down the amplifier if either heatsink's temperature reaches 85°C. The THERMAL PROTECTION LED's will light whenever the thermal protection circuit on its respective channel has been triggered and the amplifier is inoperative. The thermal protection circuitry will typically be triggered by very high power demands into impedances much lower than the amplifier is capable of driving at those levels. If either amplifier channel's output through the loudspeaker(s) ceases abruptly, and one or both of the THERMAL PROTECTION LED's glow, you will know that the circuitry is protecting the amplification devices. Once the temperature of the heatsink(s) drops to a safe operating level, the amplifier will automatically resume operation.

Activation of the thermal protection circuitry in the GFA-5802 is an indication that the amplifier has been overdriven or that the load the loudspeakers are presenting to the amplifier is unreasonably low. If you wish to prevent recurring activation of the thermal protection circuitry, you must reduce the volume level demands or correct the load-impedance condition which may be causing activation of this circuitry, or both internal protection fuses may blow.

Another reason that the THERMAL PROTECTION LEDs will glow is if the Speaker Outputs (Ⓐ or Ⓑ) are shorted (if the positive and negative wires were to touch together). If this occurs, you will experience severe distortion from the speakers for a few seconds. The amplifier will then shut down and the PROTECTION LEDs will glow.

SERVICING

ADCOM has a Technical Service Department to answer questions pertinent to the installation and operation of your unit. In the event of difficulty, please contact us for prompt advice. If your problem cannot be resolved through our combined efforts, we may refer you to an authorized repair agency, or authorize return of the unit to our factory.

Please address mail inquires to:
ADCOM Service Corporation
11 Elkins Road
East Brunswick, NJ 08816 USA

Phone or fax inquires to:
Telephone: (908) 390-1130 or after 7/97 (732)
Fax: (908) 390-9152 or after 7/97 (732)
Monday through Friday
9:00 AM to 5:00 PM EST

When calling or writing about your GFA-5802, be sure to note and refer to its serial number as well as the date of purchase and the dealer from whom it was purchased. In the event the unit must be returned to our factory for service, you will be instructed on the proper procedure when you call or write for a Return Authorization. **UNDER NO CIRCUMSTANCES SHOULD YOUR UNIT BE SHIPPED TO OUR FACTORY WITHOUT PRIOR AUTHORIZATION.**

If the original shipping carton and its fillers have been lost, discarded, or damaged, a duplicate carton may be obtained from our Service Department for a nominal charge.

Always ship PREPAID VIA UNITED PARCEL SERVICE (UPS) OR OTHER APPROVED CARRIER. DO NOT SHIP VIA PARCEL POST, since the packing was not designed to withstand rough Parcel Post handling. FREIGHT COLLECT SHIPMENTS CAN NOT BE ACCEPTED UNDER ANY CIRCUMSTANCES.

GFA-5802 SPECIFICATIONS

Power Rating (To FTC Requirements)

300 watts continuous average power into 8 ohms: 20Hz and 20kHz with both channels driven at less than 0.18% THD
450 watts continuous average power into 4 ohms: 20Hz and 20kHz with both channels driven at less than 0.18% THD

IM Distortion (SMPTE)

1 watt to 300 watts into 8 ohms... < 0.075%
1 watt to 450 watts into 4 ohms... ≤ 0.075%

IM Distortion (CCIF, Any Combination from 4kHz to 20kHz)

300 watts into 8 ohms ≤ 0.075%
450 watts into 4 ohms ≤ 0.075%

THD + Noise at 300 watts into 8 ohms (Typical)

20Hz..... 0.015%
1kHz..... 0.02%
10kHz..... 0.09%
20kHz..... 0.15%

THD + Noise at 450 watts into 4 ohms (Typical)

20Hz..... 0.025%
1kHz..... 0.025%
10kHz..... 0.09%
20kHz..... 0.15%

Frequency Response @ 1 Watt into 8 ohms (10Hz to 20kHz)..... +0, -0.25dB

Power Bandwidth (-3dB)..... 3Hz to 130kHz

Dynamic Headroom into 4 ohms 2.3dB

Signal to Noise Ratio, "A" Weighted (300 watts onto 8 ohms)..... ≥ 105dB

Gain..... 29 dB

Input Impedance

Unbalanced 105K ohms
Balanced (bridged) 10K ohms

Input Sensitivity

for 1 Watt output..... 0.1 volts
for 300 Watts output..... 1.7 volts

Rise Time (5kHz, 90 V peak-to-peak square wave, 20% to 80%) 2.25 μS

Power Consumption (Continuous, Both Channels Driven)

Quiescent 540VA
Maximum 1440VA
300 watts into 8 ohms 1340VA

Power (Available in 230VAC by special order) .. 15VAC - 50/60Hz

Chassis Dimensions..... 13^{7/8}" (mm) x 17" (432mm) x 8" (mm)

Maximum Dimensions..... 15^{1/2}" (mm) x 17" (432mm) x 8^{1/4}" (mm)

Weight..... 48 lb. (kg)

Weight, Packed .. 55 lb. (kg)

ADCOM®

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East Brunswick, NJ 08816 U.S.A.

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